Remarks:

Claims 1-14 are amended and claims 15-17 added herein. Upon entry of this amendment, claims 1-17 will be pending in the subject Application.

A substitute specification without markings (i.e., clean) excluding the claims is attached per the Examiner's request. A substitute specification showing markings (i.e., redlined) was submitted with the Request for Continued Examination filed April 6, 2005. The substitute specification contains no new matter.

Objection under 35 U.S.C. § 132(a)

Claims 1 and 6 have been amended to remove the references to "entire" and "all of", respectively. Accordingly, the objection to claims 1 and 6 has been overcome and Applicant requests the objection be withdrawn.

Claim 7 has been amended to clarify the meaning. Accordingly, the object to claim 7 has been overcome and Applicant requests the objection be withdrawn.

Claims 1-7 and 9-12 – Section 112

Applicant respectfully requests reconsideration of the rejection of claims 1-7 and 9-12 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. The amendment to claims 1, 6 and 7 deletes or clarifies the matter referenced in the rejection, rendering the point moot and the rejection improper. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

Claims 1-14 – Section 112

Applicant respectfully requests reconsideration of the rejection of claims 1-14 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Regarding the display of stereoscopic images, the amendment deletes "stereoscopic" from each claim. Regarding the arbitrary phase distribution, the previous amendment, filed April 6, 2005, deleted claim references to an "arbitrary phase distribution". Regarding Fourier transformations, the amendment clarifies what is being

transformed in each relevant claim. For example, claim 7 has been amended to clarify that the Fourier transformation is performed on image data corresponding to the radiated light. Support for the Fourier transform-related matter in the specification can be found, among other places, on pages 10, 11, and 23 of the substitute specification submitted herewith. For example, in lines 8-13 of page 23, the specification describes that a Fourier transformation section "receives image display image data from an external apparatus...and performs the Fourier transformation processing of the display image data." Further, in lines 15-22 of page 23, the specification describes that the GLV is controlled "in accordance with the data input from the Fourier transformation section". Regarding parallax, the amendment deletes "to achieve horizontal parallax" from claim 2 and "to achieve vertical parallax" from claim 3. Regarding the top surface of the ribbon elements, the amendment deletes "entire" from claim 1. Because the claims, as amended, enable one skilled in the art to make and use the invention, the rejection is improper. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

Claims 1-14 – Objection

Applicant respectfully requests reconsideration of the objection to claims 1-14. Regarding the various directions referred to in the claims, the amendment to claims 1-14 clarifies the nature of and distinction between these directions. Regarding Fourier transformation, the amendment clarifies what is being Fourier transformed in claim each relevant claim. For example, claim 7 has been amended to clarify that the Fourier transformation is performed on image data corresponding to the radiated light. Support for the Fourier transform-related matter in the specification can be found, among other places, on pages 10, 11, and 23 of the substitute specification submitted herewith. For example, in lines 8-13 of page 23, the specification describes that a Fourier transformation section "receives image display image data from an external apparatus...and performs the Fourier transformation processing of the display image data." Further, in lines 15-22 of page 23, the specification describes that the GLV is controlled "in accordance with the data input from the Fourier transformation section". Accordingly, Applicant respectfully requests that the objection be withdrawn. Regarding claim 9, the amendment clarifies the relationship of the volume type hologram and the rest of the elements. Regarding claim 14, the Office

Action states that it is not clear if the rotation of the modulator achieves the scanning function stated in the base claim. However, the base claim (claim 8) is silent as to what device is used to achieve the scanning and claim 14 expressly states that the modulation device performs the spatial modulation, not the scanning. Accordingly, the objection is improper and Applicant respectfully requests that the objection be withdrawn.

Claims 1 and 5 – Section 102

Applicant respectfully requests reconsideration of the rejection of claims 1 and 5 under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 6,215,579 (Bloom). As amended, claims 1 and 5 recite, among other things, a controller including a clock for generating a reference signal by which the controller operates, a Fourier transformation section that performs Fourier transformation of image data associated with the light during operation of the apparatus, and a spatial modulation section that controls the independent driving of modulator elements in accord with the Fourier transformed data.

Bloom discloses an apparatus and method for modulating light including deforming elongated elements 200 by varying a drive voltage. Bloom does not disclose that the drive voltage is varied in accordance with a Fourier transform of image data, as claimed. Because Bloom does not disclose every claimed feature, the rejection is improper. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claims 7, 8, and 13 – Section 102

Applicant respectfully requests reconsideration of the rejection of claims 7, 8, and 13 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,694,235 (Kajiki). As amended, claim 7 recites, among other things, means for radiating coherent light, means for receiving image data corresponding to the coherent light, and means for spatially modulating the coherent light in a first one-dimensional direction, wherein the means for spatially modulating is controlled in part according to Fourier transformation of the image data function. As amended, claims 8 and 13 recite, among other things, radiating coherent light, Fourier transforming image data associated with the light, and spatially modulating the coherent light in a one-dimensional first direction in accord with the transformed image data.

Kajiki discloses a 3-D recording/reproducing system including a modulator 19 but does not show that the modulator is "controlled in part according to Fourier transformation of...image data" (claim 7) or "modulating the coherent light...in accord with...transformed data" (claim 8). Because Kajiki does not disclose every claimed feature, the rejection is improper. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claims 1-6, 11, and 12 – Section 103

Applicant respectfully requests reconsideration of the rejection of claims 1-6, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Kajiki in view of Bloom. As amended, claims 1-5, 11, and 12 recite, among other things, a controller including a clock for generating a reference signal by which the controller operates, a Fourier transformation section that performs Fourier transformation of image data associated with the light during operation of the apparatus, and a spatial modulation section that controls the independent driving of modulator elements in accord with the Fourier transformed data. As amended, claim 6 recites, among other things, a collimator lens making light modulated by the Grating Light Valve device into parallel rays, a scan unit scanning the parallel rays coming from the collimator lens, a Fourier transformation lens having a Fourier surface and performing Fourier transformation on the scanned rays, and a diffuser panel disposed on said Fourier surface for diffusing the rays coming from the Fourier lens.

Kajiki discloses a 3-D recording/reproducing system including a modulator 19 and a collimate lens 22. Bloom discloses an apparatus and method for modulating light including deforming elongated elements 200 by varying a drive voltage. Regarding claims 1-5, 11, and 12, Kajiki and Bloom, individually and in combination, fail to show or suggest a controller including a clock for generating a reference signal by which the controller operates, a Fourier transformation section that performs Fourier transformation of image data associated with the light during operation of the apparatus, and a spatial modulation section that controls the independent driving of modulator elements in accord with the Fourier transformed data. Specifically, Bloom does not disclose that the drive voltage described in the patent is varied in accord with a Fourier transform of image data, as claimed, and Kajiki does not describe the function of the modulator 19 or its operation in

detail.

Regarding claim 6, Kajiki and Bloom, individually and in combination, fail to show or suggest a Fourier transformation lens having a Fourier surface and performing Fourier transformation on the scanned rays and a diffuser panel disposed on said Fourier surface for diffusing the rays coming from the Fourier lens.

Because the references, individually and in combination, fail to show or suggest every claimed feature, the rejection is improper. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claims 9 and 10 – Section 103

Applicant respectfully requests reconsideration of the rejection of claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Kajiki and Bloom in view of U.S. Patent No. 5,550,779 (Burr). As amended, claims 9 and 10 recite, among other things, a controller including a clock for generating a reference signal by which the controller operates, a Fourier transformation section that performs Fourier transformation of image data associated with the light during operation of the apparatus, and a spatial modulation section that controls the independent driving of modulator elements in accord with the Fourier transformed data.

Kajiki discloses a 3-D recording/reproducing system including a modulator 19, but does not describe the modulator or its operation in detail. Bloom discloses an apparatus and method for modulating light including deforming elongated elements 200 by varying a drive voltage. Burr describes an apparatus including a mirror array 52. The references, individually and in any combination, fail to show or suggest a controller including a clock for generating a reference signal by which the controller operates, a Fourier transformation section that performs Fourier transformation of image data associated with the light during operation of the apparatus, and a spatial modulation section that controls the independent driving of modulator elements in accord with the Fourier transformed data.

Further regarding claim 9, the references, individually and in combination, fail to show or suggest a polygon mirror and a volume type hologram device, as claimed.

Further regarding claim 10, the reference, individually and in combination, fail

to show or suggest a multistage mirror having a plurality of stacked reflection surfaces, wherein each surface has an angle that is different than angles of the other of the reflection surfaces, wherein the mirror scans the light scanned by the scan unit in a direction intermediate said second direction and the arraying direction of the elements. The Office Action relies on the mirrors 14, 16, 54 of Burr as the claimed "multistage mirror". However the mirrors of Burr do not have a plurality of stacked reflection surfaces, wherein each surface has an angle that is different than angles of the other of the reflection surfaces. Instead, each surface of the Burr mirrors has an angle that is the same as angles of other of the reflection surfaces of the respective mirror.

Because the reference fails to show or suggest every claimed feature, the rejection is improper. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claim 14 – Section 103

Applicant respectfully requests reconsideration of the rejection of claims 14 under 35 U.S.C. § 103(a) as being unpatentable over Kajiki. As amended, claim 14 recites, among other things, radiating coherent light, Fourier transforming image data associated with the light, and spatially modulating the coherent light in a one-dimensional first direction in accord with the transformed image data.

Kajiki discloses a 3-D recording/reproducing system including a modulator 19, but does not describe the modulator or its operation in detail. Kajiki fails to show or suggest radiating coherent light, Fourier transforming image data associated with the light, and spatially modulating the coherent light in a one-dimensional first direction in accord with the transformed image data. Further, Kajiki fails to show or suggest rotating the modulator as claimed. The Office Action states that it is unclear whether the rotation of the modulator achieves the scanning function. However, the claim does not assert that the modulator scans. Instead, the claim states that the modulator performs the spatial modulation. Further, it is clear from the specification that the scanning function is performed by a scanning device or unit, as shown, for example, in claims 1 and 6

Because the reference fails to show or suggest every claimed feature, the rejection is improper. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Conclusion

As it is believed that the Application is in condition for allowance, a favorable action and Notice of Allowance are respectfully requested.

Respectfully submitted,

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